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EXAMINER

ROSS, JOHN M

ART UNIT PAPER NUMBER

2188

DATE MAILED: 03/19/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/739,265

Applicant(s)

YASOSHIMA, HIROYUKI

Examiner

John M Ross

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 January 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-7,9-12,14-17 and 19-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-7,9-12,14-17 and 19-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Status of Claims

1. Claims 3, 8, 13 and 18 are canceled.

Claim 21 is new.

Claims 1-2, 4-7, 9-12, 14-17, and 19-21 are pending in the application.

Claims 1-2, 4-7, 9-12, 14-17, and 19-21 are rejected.

Response to Amendment

2. Applicant's amendment filed on 5 January 2004 (Paper No. 6) in response to the office action mailed on 22 September 2003 necessitates new ground(s) of rejection under 35 USC 103 and 35 USC 112 as presented below in this Office action.

Drawings

3. A corrected drawing for Figs. 1 and 2 was received on 5 January 2004. These drawings have been approved by the Examiner.

Claim Objections

4. Claim 21 is objected to because of the following informalities:

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Claim 21 is dependent on claim 1 and recites a "plurality of boundary pointers" (Claim 21, line 2). However, a plurality of boundary pointers has not been previously recited in the claims.

It appears that the intention was to have claim 21 depend from claim 16, which has antecedent basis for a plurality of boundary pointers. It is suggested that the phrase "claim 1" in line 1 of claim 21 be replaced with "claim 16." The claim(s) will be interpreted in light of this suggestion.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1-5, 11-15 and 21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

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Claim 1 recites that the “boundary pointer is capable of changing in a circulating fashion within the plurality of address location of the ring buffer” (Claim 1, lines 8-9). There is no support for this limitation in the specification. Although the specification provides support for a boundary pointer that changes, the specification does not teach that the boundary pointer changes in a circulating fashion, where the term “circulating” is interpreted to mean following a course completely around the ring and returning to the starting point. Fig. 4 shows the boundary pointers merely moving forward and backward over a limited portion of the ring, and there is no suggestion elsewhere in the specification that the boundary pointers move otherwise.

Claims 11 and 21 are rejected using the same rationale as for claim 1 above.

For the purposes of examination, this limitation will be ignored in all claims.

All dependent claims are rejected under the same rationale as the claims they depend from.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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8. Claims 1-2, 4-5, 11-12 and 14-15 rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art (APA) in view of Kornher (US 6,094,695).

As in claim 1, APA discloses a system comprising:

a ring buffer having a plurality of address locations for storing incoming data (Fig. 2A; page 2, lines 19-22); and

a boundary pointer for indicating an end point of a buffer area formed within the ring buffer into which the incoming data is stored (Page 3, lines 8-14).

APA does not teach a controller for adjusting the value of the boundary pointer in accordance with the amount of incoming data to be stored as required by claim 1.

APA also does not teach moving the boundary pointer so as to increase the size of the buffer on the basis of a 1:1 correspondence with the amount of incoming data as required by claim 4.

APA also does not teach dynamically varying the value of the boundary pointer during operation in response to the amount of the incoming data to be stored as required by claim 5.

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As to claim 1, Kornher teaches a boundary pointer for defining a buffer area for storing incoming data, wherein a controller adjusts the value of the boundary pointer in accordance with the amount of incoming data to be stored (Fig. 1, element 20; column 4, lines 18-28). Kornher further teaches that adjusting the boundary pointer value allows the use of a smaller memory (Column 4, lines 46-51).

Regarding claim 1, it would have been obvious to one of ordinary skill in the art at the time of invention by applicant to provide a controller for adjusting the boundary pointer as taught by Kornher, in the system of APA, in order to allow the use of a smaller memory as taught by Kornher.

As in claim 2, APA teaches a read pointer for indicating a read address of the buffer, and a write pointer for indicating a write address of the buffer (Figs. 1 and 2A; page 2, lines 20-23).

As to claim 4, Kornher teaches that the controller operates to move the boundary pointer so as to increase the size of the buffer on the basis of a 1:1 correspondence with the amount of incoming data (Fig. 3; column 6, lines 22-58). The boundary pointer in the system of Kornher is moved only when a data word needs to be added to the buffer, and the boundary moves a single data word at a time (i.e. on a 1:1 basis with the incoming data). Kornher also teaches that moving the boundary allows the buffer size to increase and decrease as needed, thereby allowing a smaller amount of memory space to be reserved for data storage (Column 2, lines 54-62).

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Regarding claim 4, it would have been obvious to one of ordinary skill in the art at the time of invention by applicant to cause the controller to operate move the boundary pointer so as to increase the size of the buffer on the basis of a 1:1 correspondence with the amount of incoming data as taught by Kornher, in the system of APA, in order to increase and decrease the buffer size as needed and allow a smaller amount of memory space to be reserved for data storage as taught by Kornher.

As to claim 5, Kornher teaches that the controller dynamically varies the value of the boundary pointer during operation in response to the amount of incoming data to be stored, thereby allowing continuous buffer size adjustments during a receive or transmit operation, and to allow the use of a smaller memory (Column 2, lines 54-59; column 4, lines 46-51).

Regarding claim 5, it would have been obvious to one of ordinary skill in the art at the time of invention by applicant to have the controller dynamically vary the value of the boundary pointer during operation in response to the amount of incoming data to be stored as taught by Kornher, in the system of APA, in order to allowing continuous buffer size adjustments during a receive or transmit operation and to allow the use of a smaller memory as taught by Kornher.

Claims 11-12 and 14-15 are rejected using the same rationale as for the rejection of claims 1-2 and 4-5, respectively.

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9. Claims 6-7, 10, 16-17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art (APA) in view of O'Neill (WO 96/38778 A1).

As in claim 6, APA discloses a system comprising:

a ring buffer which acts as one ring, having a plurality of address locations for storing incoming data (Fig. 2B);

a first boundary pointer for indicating an end point of a first buffer area formed within the ring buffer in to which the incoming data can be stored (Fig. 2B; page 3, lines 20-22); and

a second boundary pointer for indicating an end point of a second buffer area formed within the ring buffer into which the incoming data can be stored (Fig. 2B; page 3, lines 20-22).

APA does not teach a controller for adjusting the value of the first and second boundary pointers in accordance with the amount of incoming data to be stored as required by claim 6.

APA also does not teach that the controller dynamically varies the value of the first and second boundary pointer during operation in response to the amount of incoming data to be stored as required by claim 10.

As to claim 6, O'Neill teaches a system where first and second boundary pointers indicate end points of a first and second buffer area (Fig. 3, elements A and B; page 3, lines 10-21), and where a controller adjusts the value of the first and second boundary pointers in

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accordance with the amount of incoming data to be stored, thereby allowing the sizes and relative sizes of the buffers to be varied (Page 2, lines 8-13; page 2, line 26 to page 3, line 2; page 3, lines 22-27).

Regarding claim 6, it would have been obvious to one of ordinary skill in the art at the time of invention by applicant to define boundary pointers, and use a controller to adjust the values of the first and second boundary pointers in accordance with the amount of incoming data to be stored as taught by O'Neill, in the system of APA, in order to allow the sizes and relative sizes of the buffers to be varied as taught by O'Neill.

As in claim 7, APA discloses:

a first read pointer, coupled to the memory array, for indicating a read address of the first buffer area (Fig. 2B; page 3, line 20 to page 4, line 8);

a first write pointer, coupled to the memory array, for indicating a write address of the first buffer area (Fig. 2B; page 3, line 20 to page 4, line 8);

a second read pointer, coupled to the memory array, for indicating a read address of the second buffer area (Fig. 2B; page 3, line 20 to page 4, line 8); and

a second write pointer, coupled to the memory array, for indicating a write address of the second buffer area (Fig. 2B; page 3, line 20 to page 4, line 8).

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As to claim 10, O'Neill discloses that the controller dynamically varies the value of the boundary pointers during operation in response to the amount of incoming data to be stored (Page 2, line 26 to page 3, line 2; page 3, line 24 to page 4, line 7). Because O'Neill indicates that the boundaries are altered as an adaptation to monitored traffic flows, and also describes a method to move the boundaries while the first-in/first-out buffer is occupied with data, it may be understood that this process takes place dynamically. O'Neill further teaches that this process saves memory and allows memory to adapt to traffic in a network (Page 4, lines 4-7).

Regarding claim 10, it would have been obvious to one of ordinary skill in the art at the time of invention by applicant to dynamically vary the value of the first and second boundary pointers during operation in response to the amount of incoming data as taught by O'Neill, in the system of APA, in order to save memory and allow adaptation to traffic in a network as taught by O'Neill.

Claims 16-17 and 20 are rejected using the same rationale as for the rejection of claims 6-7 and 10, respectively.

10. Claims 9 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art (APA) in view of O'Neill (WO 96/38778 A1) as applied to claims 6 and 16 above, and further in view of Kornher (US 6,094,695).

APA and O'Neill are relied upon for the teachings relative to claims 6 and 16 as above.

The combination of APA and O'Neill does not teach that the controller operates to move the first and second boundary pointers so as to increase the size of the buffers on the basis of a 1:1 correspondence with the amount of incoming data as required by claims 9 and 19.

The rationale derived from Kornher in the rejection of claim 4 above is incorporated herein for the teaching of a controller operating to move a boundary pointer so as to increase the size of a buffer on the basis of a 1:1 correspondence with an amount of incoming data (Fig. 3; column 6, lines 22-58).

Kornher also teaches that moving the boundary allows the buffer size to increase and decrease as needed, thereby allowing a smaller amount of memory space to be reserved for data storage (Column 2, lines 54-62).

Regarding claim 9, it would have been obvious to one of ordinary skill in the art at the time of invention by applicant to move the boundary pointers on the basis of a 1:1 correspondence with an amount of incoming data as taught by Kornher, in the system made obvious by the combination of APA and O'Neill, in order to increase and decrease the buffer size as needed and allow a smaller amount of memory space to be reserved for data storage as taught by Kornher.

Claim 19 is rejected using the same rationale as for the rejection of claim 9 above.

Response to Arguments

11. Applicant's arguments with respect to claims 1, 6, 11 and 16 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to John M Ross whose telephone number is (703) 305-0706. The examiner can normally be reached on M-F 8:00 AM - 4:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on (703) 306-2903. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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3/18/04